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Coping styles relate to health and work environment of Norwegian and Dutch hospital nurses: A comparative study

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ABSTRACT

Nurses exposed to high nursing stress report no health complaints as long as they have high coping abilities. The purpose of this study was to investigate coping styles in relation to the health status and work environment of Norwegian and Dutch hospital nurses. This comparative study included a random sample of 5400 Norwegian nurses and a convenience sample of 588 Dutch nurses. Coping, health, and work environment were assessed by questionnaire in both samples and associations were investigated bivariately and multivariately. We found that active problem-solving coping was associated with the health and work environment of Norwegian nurses but not with the health and work environment of Dutch. Passive coping (avoiding problems or waiting to see what happens) was found to relate to poor general health, poor mental health, low job control, and low job support in both Norwegian and Dutch nurses. Improvements in the nursing work environment may not only result in better mental health, but may also reduce passive coping.

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Introduction

Stress is a major concern in the nursing profession with work overload, role conflicts, and experiences of aggression as common stressors.[1-3] Even when the level of stress is the same, there are large individual differences in stress responses depending on how individuals cope with stress.[4] Stress is a transactional phenomenon between the individual and the

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environment, and it is the perception or appraisal of the event, rather than the event itself, that determines the subsequent response or coping behavior. Coping refers to the thoughts and actions people use to deal with stress. Some researchers define coping as habitual behavior that is stable across a wide variety of stressful situations.[5,6] The idea that coping is a personality trait[7] is supported by strong correlations between personality and coping[8,9] and by evidence that personality and coping have a shared genetic basis.[10]

The concept of coping as a dispositional trait offers a picture of how individuals are inclined to cope with stress, but provides limited information about the coping skills people actually use in stressful encounters.[7] Therefore, some researchers propose a transactional approach in which coping skills change to meet the evolving demands of a stressful situation. Coping involves the efforts to alter a stressful situation (which is problem-solving coping) as well as efforts to regulate the emotional distress of the stressful encounter (which is emotion-focused coping).[4] People typically employ problem-focused coping strategies, purposively targeted at solving the problem at hand, when they perceive control over stressful events.[11,12] Emotion-focused coping, aimed at minimizing negative emotions through seeking distraction and social support or by avoiding problems, predominates when people feel that the stressful event is something that must be endured.

Coping skills are affected by psychological disorders. For example, depressed people use less problem-solving coping and more emotion-focused coping compared with non-depressed individuals.[13] A systematic review showed that problem-focused coping was associated with good health, while emotion-focused strategies were related to poor health.[14] In nursing students, emotion-focused coping was predominantly associated with mental symptoms.[15,16] In Asian and Australian hospital nurses, problem-focused coping was related to better mental health, whereas emotion-focused coping was associated with reduced mental health.[17,18] This finding suggests mental health benefits for nurses who use problem-solving to cope with stress by addressing the external source of the stress, rather than emotion-focused coping in which nurses try to control or manage their internal response to stress.

This study investigated coping styles in relation to the work environment of Norwegian and Dutch hospital nurses. The following research question was addressed: Are the coping styles of Norwegian and Dutch hospital nurses similarly associated with their health and work environment?

Methods

This article presents the results of 2 separate studies, which were designed and performed independently of each other. Afterwards, the results turned out to be comparable, because similar questionnaires were used and both studies were performed at the same point in time. It is hardly ever possible to compare coping studies internationally. Furthermore, the literature is inconsistent and ambiguous with regard to comparing coping styles. Therefore, the results of both studies are compared in this article.

Study Samples

The data of Norwegian nurses were obtained from the Survey of Sleep, Shift Work and Health (SUSSH), conducted in the period from December 2008 to March 2009 among 87 083 members of the Norwegian Nurses Organization (NNO). A random sample of 6000 nurses was drawn from the member register of the NNO. Each nurse in the sample received a questionnaire by postal mail. The nurses returned the completed questionnaire in a prepaid envelope to the Department of Public Health and Primary Health Care of the University of Bergen. Nurses who did not return their completed questionnaire received reminders twice, once in December 2008 and once in February 2009. An internet-based version of the questionnaire was available for those who preferred to complete the questionnaire online. The Regional Committees for Medical and Health Research Ethics Western Norway approved the SUSSH study.

Dutch nurses (N = 588) were enrolled from a hospital in the northern Netherlands and received a questionnaire in October to November 2008. The nurses returned their completed questionnaire in a prepaid envelope to ArboNed Occupational Health Services. It was not possible to complete the questionnaire online. Ethical approval was not necessary, as the Dutch Act on Scientific Medical Research does not apply to cross-sectional questionnaire surveys.

General and Mental Health

General health and mental health were assessed by the SF-12 Health Survey, which is a short version of the SF-36 that measures physical and mental health-related quality of life.[19] General health was measured with the single SF-12 item asking for an overall rating of health on a 5-point scale (0 = "poor"; 1 = "fair"; 2 = "good"; 3 = "very good"; 4 = "excellent"), which is one of the most widely used general measures of health status. The Mental Health Inventory (MHI) subscale of the SF-12 measured mental health by assessing mood and anxiety symptoms.[19,20] The Norwegian nurses answered the MHI items on a 5-point scale (1 = "always"; 2 = "most of the time"; 3 = "some of the time"; 4 = "a little of the time"; 5 = "never"), whereas the Dutch nurses answered on a 4-point scale (1 = "always"; 2 = "most of the time"; 3 = "some of the time"; 4 = "never"). The scores on general health and mental health were expressed as percentages of the

Table 1 – Summary of the Instruments Used in the Study

	Norwegian Nurses		Dutch Nurses	
	Items (α^1)	Scale	Items (α^1)	Scale
Health				
SF-12 overall rating of health	1	5-point	1	5-point
SF-12 mental health inventory	5 (0.73)	5-point	5 (0.72)	4-point
Work Environment				
Job demands	5 (0.78)	4-point	5 (0.86)	4-point
Job control	6 (0.79)	4-point	6 (0.76)	4-point
Job support	6 (0.82)	4-point	6 (0.82)	4-point
Coping Styles				
Passive coping	7 (0.79)	4-point	7 (0.77)	4-point
Active coping	5 (0.74)	4-point	5 (0.74)	4-point

1 Cronbach's α of scale reliability

maximum score, with higher scores indicating better mental health.

Work Environment

The Job Content Questionnaire assessed the nursing work environment by items on job demands, job control, and job support with a 4-point scale that ranged from 1 = "strongly disagree" to 4 = "strongly agree" (Table 1).[21] Job demands were investigated with items about having to work hard or fast and dealing with conflicting job demands. Job control was assessed with items about skill discretion, autonomy, and latitude in work. Job support was measured with items about collaborating with co-workers and supervisors. The scores on job demands, job control, and job support were expressed as percentages of the maximum score for the subscale, with increasing scores indicating higher demands, control, and support, respectively.

Coping Styles

The Utrecht Coping List assesses coping styles with questions about how persons cope with stressful encounters.[22] The items had a 4-point score scale with 1 = "seldom or never"; 2 = "sometimes"; 3 = "often"; 4 = "very often." To address the differences between Norwegian nurses and Dutch nurses, we performed a principal component analysis in both samples instead of relying on the predetermined UCL-subscales. Scree plots for the Norwegian sample and the Dutch sample revealed 4 components with eigenvalues >1 (Figure 1).[23]

Component 1 consisted of items such as "I try to avoid difficult situations"; "I reconcile myself to the situation"; "I try to get away from the situation"; and "I wait to see what will happen next." These items reflected a passive coping style, which is a type of emotion-focused coping. The passive coping scale had a Cronbach's $\alpha = 0.79$ in the sample of Norwegian nurses and $\alpha = 0.77$ in the sample of Dutch nurses (Table 1).

Component 2 represented a scale of active problem-solving strategies, with items such as "I study the problem thoroughly"; "I intervene directly with the problem"; "I look upon the problem as a challenge"; and "I consider different solutions to the problem." The active coping scale had a Cronbach's $\alpha = 0.74$ in both samples (Table 1).

The items loading on components 3 and 4 differed between the Norwegian sample and the Dutch sample. Therefore, we only used the passive and active coping scales in the further analyses. The scores on these 2 coping scales were expressed as percentages of the maximum score for each style, with increasing scores indicating that the style was more frequently used in stressful encounters.

Statistical Analysis

Coping styles are unequally distributed in men and women.[24] Therefore, responses from men and women must be analyzed separately. As the Dutch sample of nurses included few men (N = 22), health and work

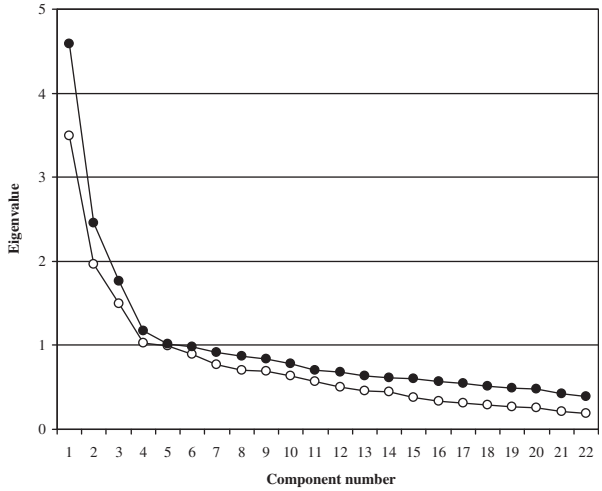

Figure 1 – Scree plot component analysis of UCL-items in both study samples.

environment were investigated in relation to the coping styles of female Norwegian and Dutch nurses.

Data were analyzed in SPSS for Windows version 16. The characteristics of female nurses working in hospitals in Norway were compared to those of female nurses working in hospitals in the Netherlands using Student *t*-tests for independent samples and χ^2 analyses of proportions. Bivariate Pearson correlations of coping styles with health and work environment were calculated separately for Norwegian nurses and Dutch nurses.

A median split dichotomized the scores on passive and active coping styles in the Norwegian sample and the Dutch sample. The dichotomized coping scores were the outcome variable in multiple logistic regression analysis in which the scores on general health, mental health, job demands, job control, and job support were included as continuous independent variables. Age was controlled for in the logistic regression analysis and significance was concluded for $P < .05$.

Results

As the addresses of 600 NNO members were not correct, the Norwegian sample consisted of 5400 nurses, of whom 2059 (38%) returned their questionnaire, and 1428 were female hospital nurses. Of the 588 Dutch hospital nurses, 408 (69%) returned their questionnaire of whom 386 were women. Norwegian nurses were 32.6 (standard deviation [SD] = 8.0) years of age and significantly younger than Dutch nurses, who had a mean age of 39.9 (SD = 9.8) years (Table 2). The difference in age was most likely due to differences in sampling. Norwegian nurses were eligible for the SUSSH study if they graduated after 1995 and worked at least 50% of a fulltime position. This may also explain the shorter duration of employment of Norwegian nurses compared with Dutch nurses, and the fact that Norwegian nurses worked more hours per week.

Dutch nurses perceived better general health and better mental health than Norwegian nurses (Table 2). Norwegian and Dutch nurses reported equal job demands, whereas Norwegian nurses experienced higher job control and support than Dutch nurses. With regard to coping styles, Dutch nurses had higher scores on both active and passive coping than Norwegian nurses.

Bivariate analyses showed positive correlations of active coping with general health, mental health, job control, and job support (Table 3). High scores on passive coping correlated with poor general health, poor mental health, high job demands, low job control, and low job support. The correlations of coping styles with health and work environment were stronger in the large sample of Norwegian nurses than in the small sample of Dutch nurses, but similar in that correlations were in the same direction.

In all, 97 Norwegian nurses (7%) and 6 Dutch nurses (2%) had incomplete data. A total of 1331 female Norwegian nurses and 380 female Dutch nurses with complete data were eligible for logistic regression analysis. Multivariate analysis showed that Norwegian nurses with active coping had higher odds (odds ratio [OR] = 1.72) of good general health (Table 4). Passive coping associated with lower odds of good general health in both Norwegian (OR = 0.91) and Dutch nurses (OR = 0.92) and also with lower odds of good mental health (OR = 0.72 and OR = 0.90, respectively).

With regard to the nursing work environment (Table 4), job control associated with higher odds of active coping in Norwegian nurses (OR = 1.31) and with lower odds of passive coping in both Norwegian (OR = 0.83)

Table 2 – Characteristics of Norwegian and Dutch Hospital Nurses

	Random Sample Norwegian Nurses (N = 1428)	Convenience Sample Dutch Nurses (N = 386)	Analysis of Difference (*P*-value)
Age	32.6 (8.0)	39.9 (10.0)	.000[a]
Duration of employment in years	5.3 (4.3)	11.9 (8.6)	.000[a]
Work hours per week			.000[b]
N (column%) < 20 hours per week	37 (3%)	111 (29%)	
20–30 hours per week	448 (31%)	184 (48%)	
> 30 hours per week	943 (66%)	91 (23%)	
General health (SD[c])	77.2 (18.9)	80.9 (14.8)	.000[a]
Mental health (SD[c])	70.7 (18.4)	86.9 (11.3)	.000[a]
Job demands (SD[c])	73.2 (12.9)	69.7 (16.5)	.395[a]
Job control (SD[c])	79.0 (9.1)	73.6 (12.6)	.000[a]
Job support (SD[c])	86.2 (12.3)	75.1 (14.8)	.000[a]
Active coping (SD[c])	60.2 (10.0)	73.9 (11.3)	.000[a]
Passive coping (SD[c])	42.0 (9.4)	57.8 (11.8)	.002[a]

[a] Student *t*-test
[b] Chi-square test
[c] Standard Deviation

Table 3 – Bivariate Correlations of Coping Styles With Health and Work Environment

	Norwegian Nurses (N = 1428)		Dutch Nurses (N = 386)	
	Active	Passive	Active	Passive
N	1423	1423	380	380
Missing	5	5	6	6
General health	.15**	−.22**	.16*	−.01
Mental health	.14**	−.45**	.11*	−.13**
Job demands	−.03	.11**	−.10	.11*
Job control	.20**	−.15**	.26**	−.16**
Job support	.14**	−.16**	.29**	−.23**

The table shows Pearson correlation coefficients with *P < .05 and **P < .01 (2-tailed).

and Dutch nurses (OR = 0.72). Job support related to higher odds of active coping in Dutch nurses (OR = 1.31) and to lower odds of passive coping in both Norwegian (OR = 0.90) and Dutch nurses (OR = 0.78). Thus nurses with a passive coping style experienced low control over work and low social support at the workplace.

Discussion

This study describes the associations between coping styles, health, and work environment in a large random sample of Norwegian hospital nurses educated after 1995 and a smaller convenience sample of Dutch nurses who had worked in a hospital for an average of 12 years. Differences in the results between Norwegian and Dutch nurses may well be due to the different sampling. Therefore, we focus the discussion on the similarities of associations.

Passive coping, which is an emotion-focused coping strategy, associates with poor general health and poor mental health in both Norwegian and Dutch nurses. This finding confirms previous results showing that emotion-focused coping strategies, such as distancing and avoidance, were each correlated with poor general health.[14] Distancing, resignation, and avoidance were also reported to be related to negative psychological health outcomes, which is in agreement with the strong associations between passive coping styles and poor mental health in the present study. The association of passive coping with poor mental health is in agreement with the results of previous studies on nursing stress and emotion-focused coping in hospital nurses.[17,18]

Nursing Work Environment and Work Styles

With regard to the nursing environment, low job control and low job support were related to passive coping styles among nurses in both countries. Jobs that are low in demands and control are called passive jobs in Karasek's Demand-Control model.[25] Passive jobs lack work challenges and can lead to negative learning or gradual loss of previously acquired skills. Low control prevents workers from testing their own ideas for improving the work process and results in a demotivating job setting with loss of work performance.[25] Alternatively, active jobs with high control have a positive effect on learning and self-efficacy.[25,26] Although active jobs have high demands, they do not cause negative psychological strain, because job stressors are regarded as challenges and translated into direct action. Due to the high levels of control, the workers have the freedom to use all available capabilities. When workers have the freedom to decide the course of action in response to job stressors, they can test the efficiency of the chosen actions. Karasek's active learning hypothesis states that new behavior patterns are learned by reinforcing actions that have worked, and modifying actions that have failed.[25,27] The present results showed that job control associated bivariately with active coping in both populations and multivariately in the larger Norwegian population.

Table 4 – Multivariate Associations of Coping Styles With Health and Work Environment Controlling for Age

	Norwegian Nurses (N = 1331)		Dutch Nurses (N = 380)	
	Active	Passive	Active	Passive
General health	1.72 (1.56–1.88)**	.91 (.84–.99)*	1.05 (0.95–1.16)	.92 (.85–1.00)*
Mental health	1.03 (0.95–1.11)	.72 (.66–.78)**	1.13 (0.94–1.39)	.90 (.84–.98)*
Job demands	1.02 (0.92–1.13)	1.08 (.98–1.19)	1.00 (0.87–1.15)	1.08 (.73–1.27)
Job control	1.31 (1.14–1.35)**	.83 (.73–.96)**	1.14 (0.95–1.36)	.72 (.56–.90)**
Job support	1.04 (0.94–1.15)	.90 (0.82–1.00)*	1.31 (1.12–1.53)**	.78 (.65–.93)**

The table shows odds ratios (95% CI) per 10 years increase in age and per 10% increase in the scores on health and work environment (on a scale from 0% to 100%) with *P < .05 and **P < .01.

These results support that improved control over nursing care may stimulate active coping and counteract passive coping behavior. However, the cross-sectional design of our study precludes conclusions about causal relationships between the nursing work environment and coping, because it is also possible that passive coping styles result in the perception of low job control and low job support. Moreover, the cross-sectional design implied that associations between mental health, passive coping, and work environment may reflect a common-method bias[28]—for example, if nurses with habitual passive coping are gloomy about their health and work environment.

Implications for Practice

Current evidence indicates that social and environmental attributes of hospital nursing practice have an effect on the outcomes of care.[29,30] Furthermore, the nursing work environment is important for recruiting and retaining nurses in hospitals. During the US national nursing shortage in the 1980s, a group of hospitals was designated as "magnet hospitals" because of the ability to successfully attract and retain professional nurses when most hospitals throughout the US were having difficulty achieving that goal.[31] Themes identified by nurses for purposes of retention included a desire for autonomy, empowerment, and decision-making opportunities in their work.[31-33] Control over nursing practice and autonomy in decision-making, together with collaborative relationships and the perception that staffing is adequate, were essential for a satisfying and productive work environment from the perspective of staff nurses.[34] Nurse managers play a key role in creating a positive nursing work environment. It has been shown that collaboration and participation are empowering working conditions that are fundamental for creating healthy nursing work environments.[35] Collaboration refers to job support and participation in decision-making reflects job control. The results of the present study show that low support (ie, poor collaboration) and low control (ie, poor participation) at work relate to a passive coping style. This may adversely affect the quality of care and patient outcomes. Further prospective research is needed to provide a better understanding of the mechanisms that link the nursing work environment to nursing care and patient outcomes. Nevertheless, the findings of the present study emphasize the importance of good collaboration and participation in nursing teams, which may help nurse managers and others to consider strategies for the improvement of the nursing work environment to foster more positive outcomes for both nurses and patients.

Strengths and Limitations of the Study

Norwegian nurses and Dutch nurses completed similar questionnaires at the same point in time. Although the response rate of Norwegian nurses was low and vulnerable to selection bias, it was reassuring to find similar bivariate correlations between coping styles, health, and work environment in Dutch nurses who had a response rate of 69%. The strength of our results is established by the similarities in associations observed in both samples. Differences in associations may be due to sampling differences—the Norwegian population being a random stratified sample, and the Dutch population a sample of convenience. The low response rate among Norwegian nurses and the convenience sample of Dutch nurses restrict the generalizability of the results for nurses in the broader setting of healthcare.

Another limitation is that the studies were designed and performed separately. Afterwards, the results of both studies appeared to be comparable, except for the response alternatives on the Mental Health Inventory. Norwegian nurses scored mental health items on a 5-point scale, whereas the Dutch nurses used a 4-point scale. We dealt with this difference by using the percentage of the maximum score instead of the cumulative score for the scales.

Furthermore, the coping scores differed between the countries. Dutch nurses had higher scores on both active and passive coping than Norwegian nurses. We dealt with these cross-cultural differences by analyzing the results of Norwegian nurses and Dutch nurses separately. The respondents consistently scored higher on active coping than on passive coping, indicating that problem-solving coping strategies were preferred. Possibly, problem-solving coping styles are more valued and appreciated than emotion-focused styles. An alternative explanation for the higher scores on active coping may be that the nature of nurses' work requires them to be problem-solvers, or that nurses are trained to take action rather than using passive strategies when problems arise. We dealt with the differences in scores by transforming coping into dichotomous variables by median split instead of using the mid-scale score of 50% of the maximum score.

Conclusion

A passive coping style, which is a type of emotion-focused coping, associates with poor (mental) health in both Norwegian and Dutch hospital nurses. Despite differences in sampling and countries, passive coping consistently associates with both low job control and low job support. On the one hand, low control and low support may evoke passive coping. On the other hand, nurses with habitual passive coping may experience little control over work and low support within the nursing team. Either way, it is important for nurse managers to recognize passive coping, because this type of coping associates with poor health.

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